

Unintended Pregnancy and Long Acting Reversible Contraception (LARC)

February 28, 2015

Dr. Erica Gibson

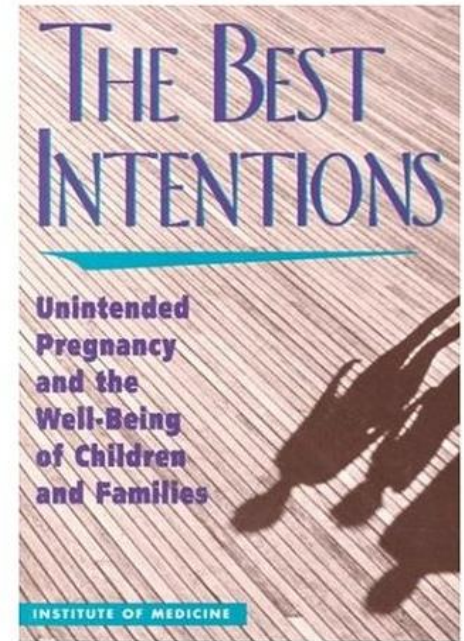
Assistant Clinical Professor of Adolescent Medicine
University of Vermont Children's Hospital

Objectives

- Understand the high rates of unintended pregnancy in the United States and Vermont
- Understand current trends sexual activity and contraceptive use
- Understand LARC methods and how they work

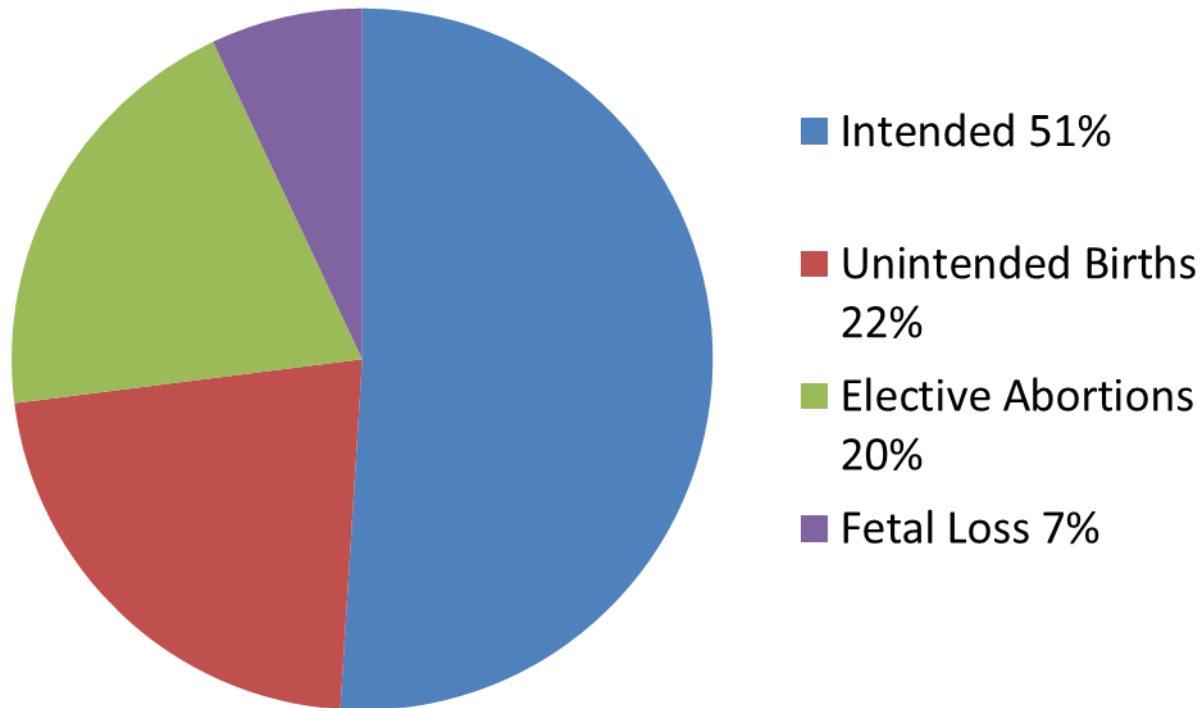
Unintended Pregnancies

- Institute Of Medicine Report (1995)
 - Unintended pregnancies
 - Mistimed or Unwanted
- Associated with adverse maternal and child health, social, and economic outcomes

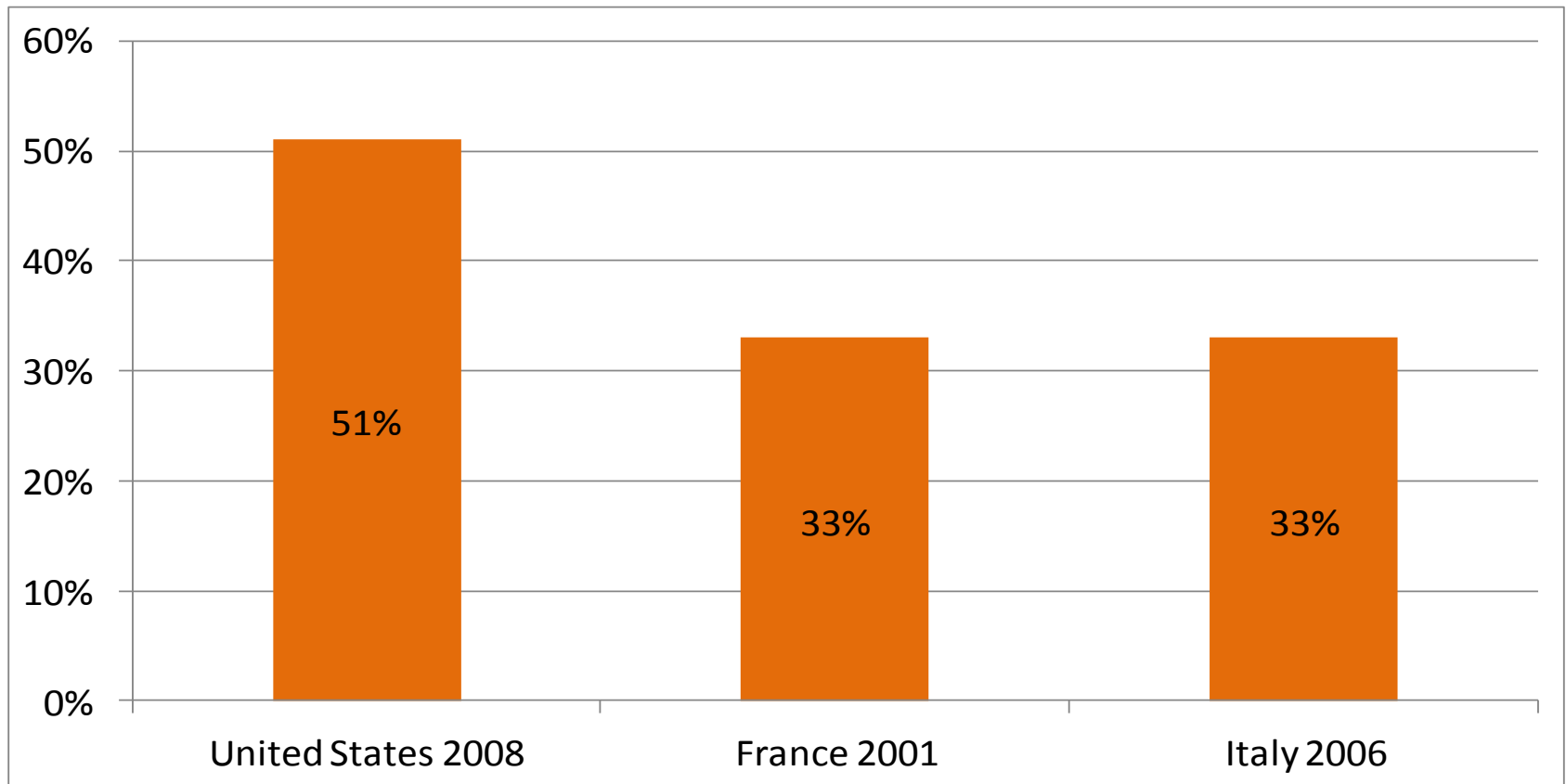


Unintended Pregnancy in the U.S. - Overall

6.4 Million Pregnancies



U.S. Percent of Unintended Pregnancies is High



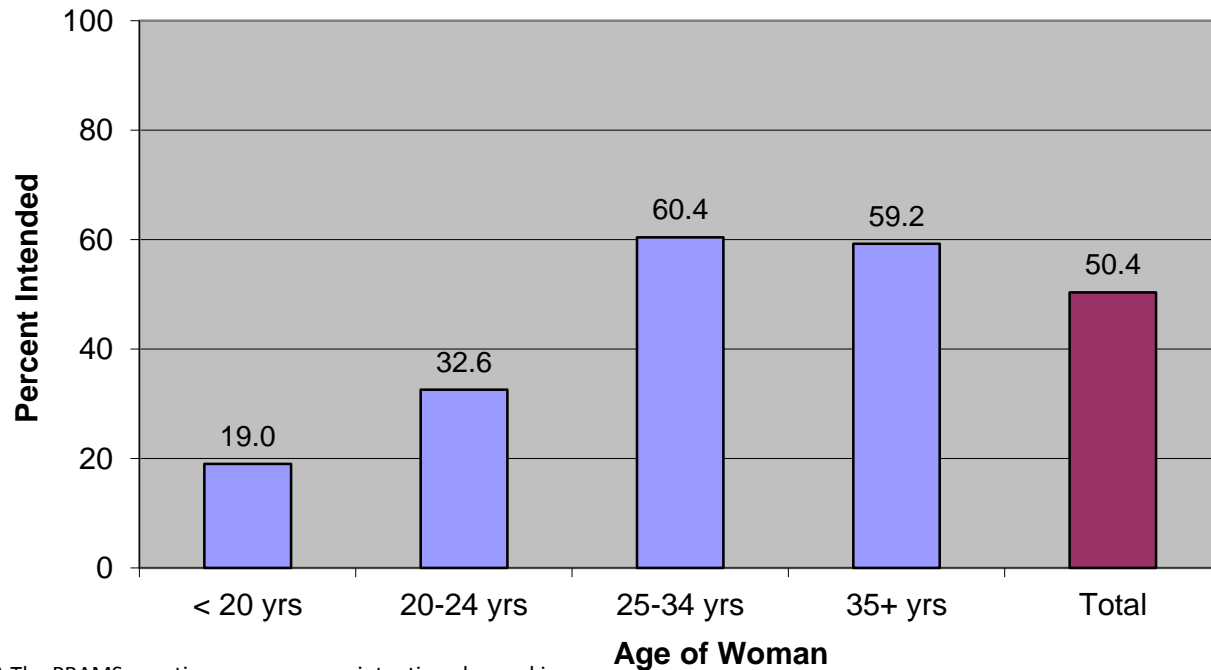
Unintended Pregnancy in VT



- 46% of all pregnancies are unintended
 - VT PRAMS Data 2012: 39.8%
- 74% of unplanned births are publicly funded
- VT spends \$30 million per year on unintended pregnancies
- Pregnancy and delivery services yield highest potentially avoidable costs

Intended Pregnancies in Vermont

Figure 4. Percent of Pregnancies to Vermont Resident Women in 2012*[^] That Were Intended, by Age



[^] The PRAMS question on pregnancy intention changed in 2012, so 2012 data is not directly comparable to previous years.

*preliminary

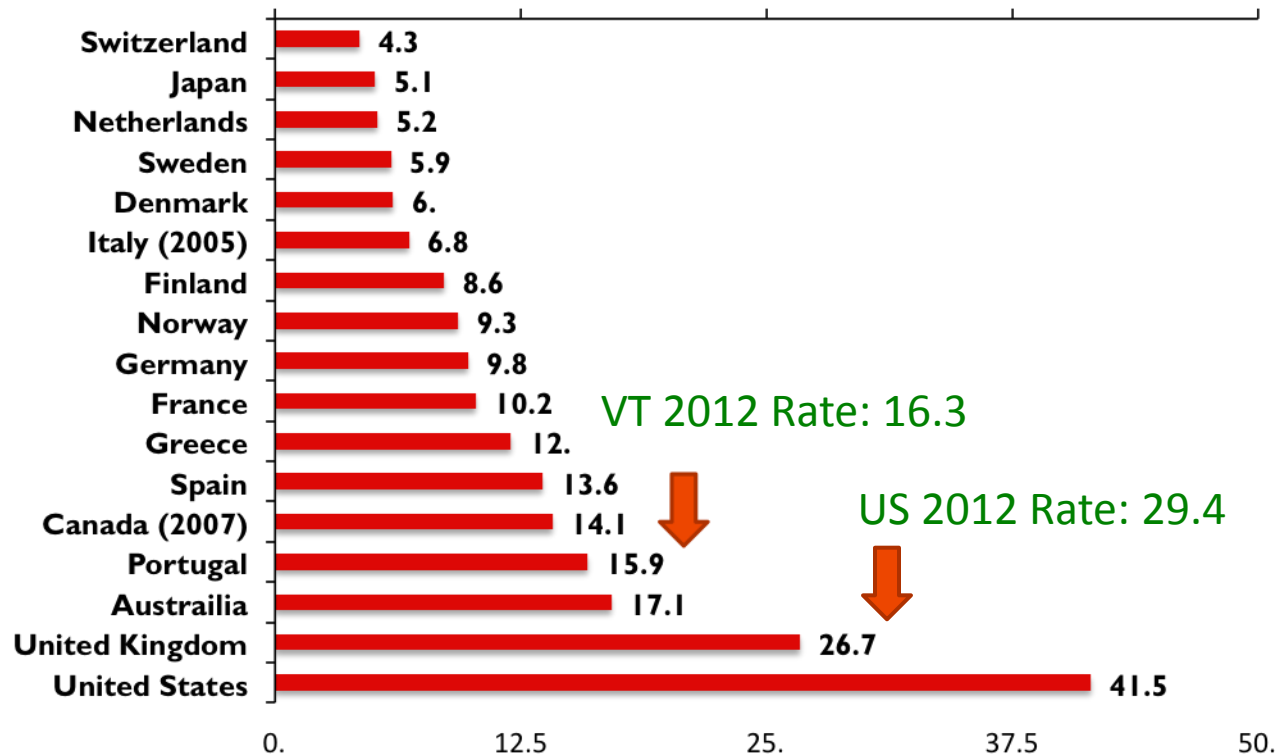
Teen Pregnancy in the U.S. 2010

State	Pregnancy Rate per 1000 Females 15-19	Rank Among United States
New Hampshire	28	1
Vermont	32	2
Oregon	47	13
New York	63	37
New Mexico	80	50
U.S.	57	

****VT 2013 Teen Preg Rate: 21.9 (VDH Vital Statistics)**

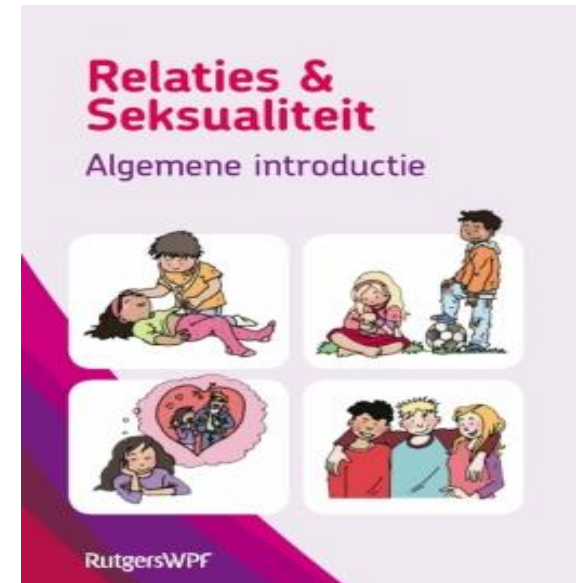
Comparing Teen Birth Rates Internationally 2008

Teen Birth Rate (per 1,000 Females 15-19)

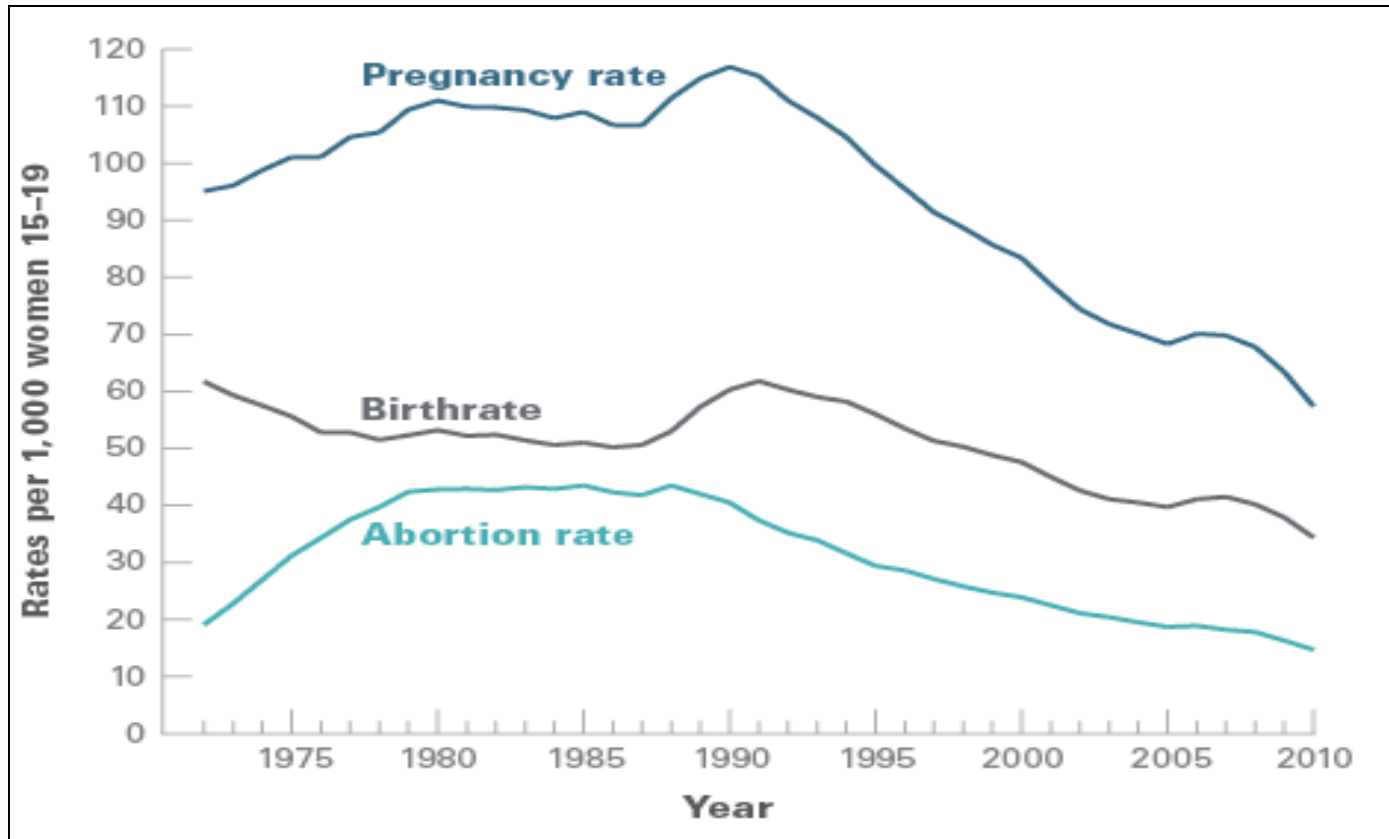


What accounts for lower rates in other developed countries?

- Culture
- Education
- Access
- Confidentiality
- Affordability
- Knowledge of medical providers
- Comfort of medical providers

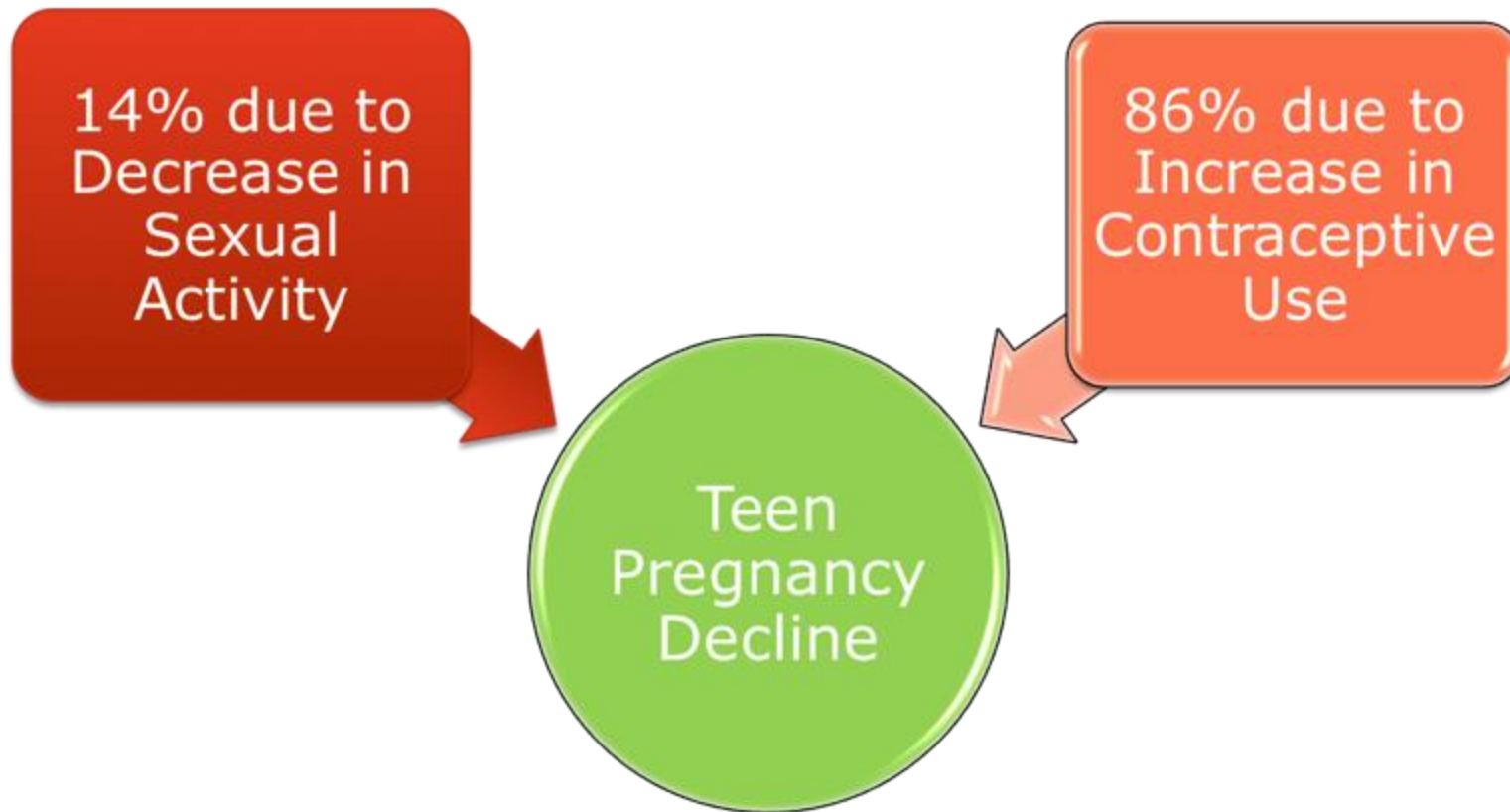


Teen Pregnancy, Birth, and Abortion Rates Are Declining (15-19 year olds)



Kost K and Henshaw S, *U.S. Teenage Pregnancies, Births and Abortions, 2010: National and State Trends by Age, Race and Ethnicity*. Guttmacher Institute 2014.

Why are teen pregnancy rates declining?



Current Contraceptive Methods Available



Effectiveness of Contraceptive Methods

Extremely effective

Prevents pregnancy
>99% of the time

Sterilization
LARCS
Implant
IUDs

Very effective

Prevents pregnancy
91-99% of the
time

Injection
Ring
Patch
Pill
Diaphragm

Moderately effective

Prevents pregnancy
81-90% of the
time

Condoms
Withdrawal
Sponge

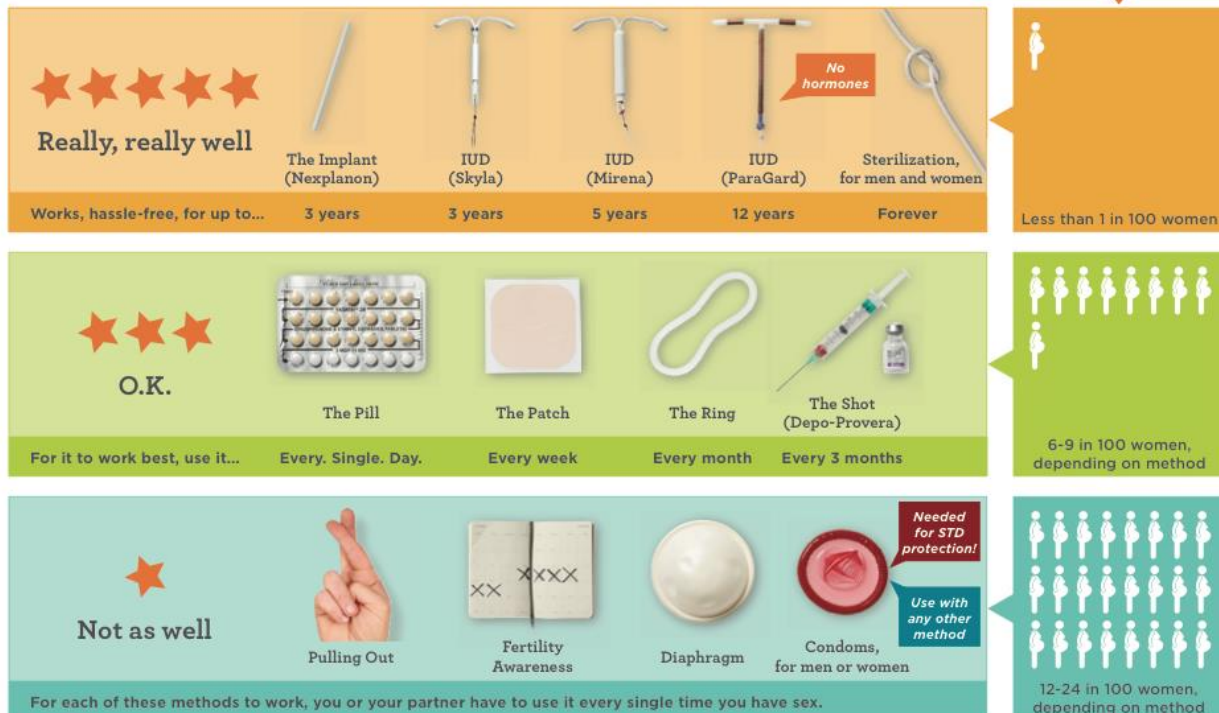
Effective

Prevents pregnancy
up to 80% of the
time

Fertility
Awareness
Spermicide

Tiered Counseling by Effectiveness

HOW WELL DOES BIRTH CONTROL WORK?



BEDSIDER
Bedsider.org



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Factors affecting contraceptive choice ...

Do any of my friends use it?

Will my parents or partner find out?

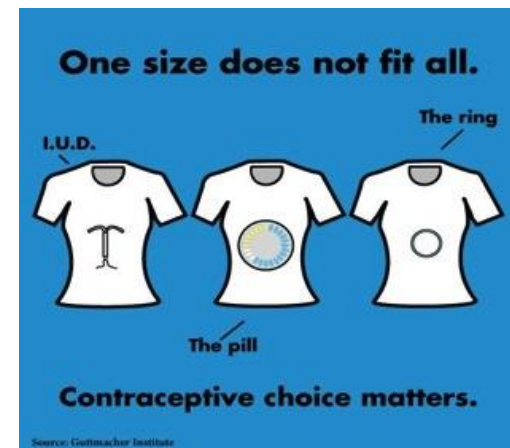
Will it hurt me?

Will I be able to afford it?

How will it help me?

What have I heard about it?

Do I want to prevent pregnancy?

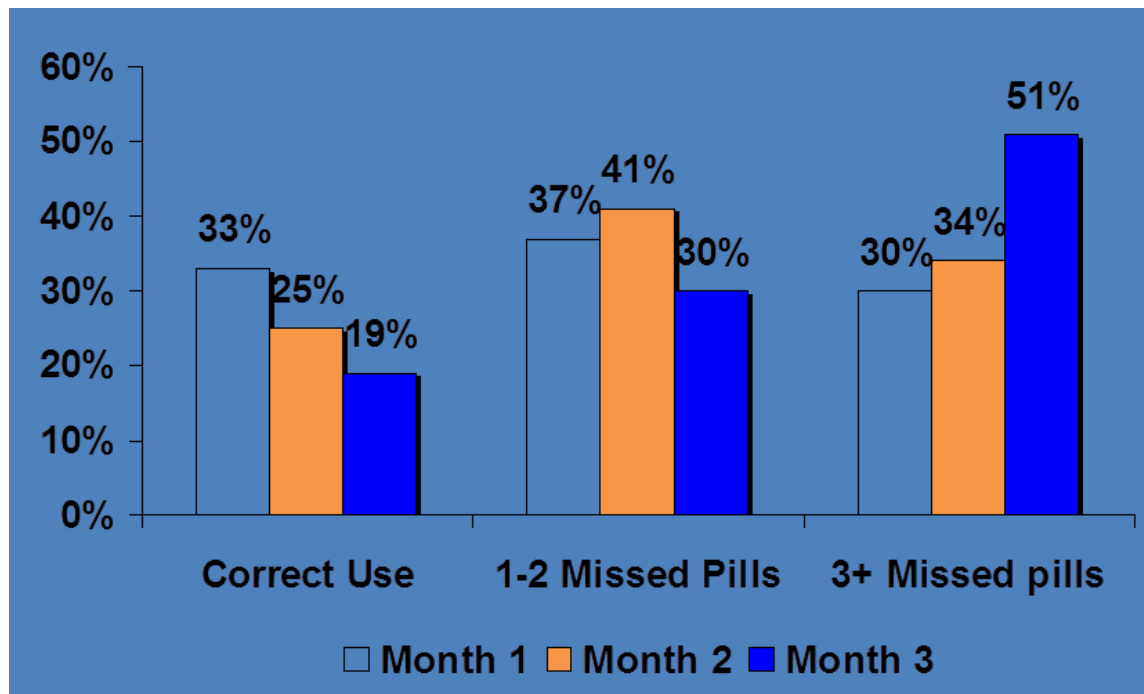


Cost of Contraceptive Methods

Method	%Failure1st Year Use		% Continuing Use at 1 Year	Cost
	Typical Use	Perfect Use		
No method	85	85		N/A
Condoms	15	2	53	20¢ to \$2.50 each
COCs	8	0.3	68	\$30-50/ month
Patch	8	0.3	68	\$30-50/month
Ring	8	0.3	68	\$30-50/month
DMPA	3	0.3	56	\$30-\$75 /injection + visit
IUD				
Copper	0.8	0.6	78	\$250-\$300 /10 yrs + visit
Progestin	0.2	0.2	80	\$300-\$400/5 yrs + visit
Nexplanon	0.05	0.05	84	\$300-\$350 / 3 yrs + visit

Imperfect Use

- Women frequently miss pills
 - Navy Contraception Handout:
“OCPs are an exceedingly failure prone method in the Navy”



Youth Risk Behavior Survey (YRBS) Data

High School Students 15-19 yo

YRBS Question	VT 2015	US 2013
% students ever had sex	41% (2013 43%)	47%
% students who used a condom at last sex	58% (2013 62%)	59%
% students who used prescription birth control at last sex	47% (2013 44%)	19%
% students who used BOTH a condom and prescription birth control at last sex	19% (2013 18%)	9%

2015 Vermont YRBS Data . High School Students 15-19yo

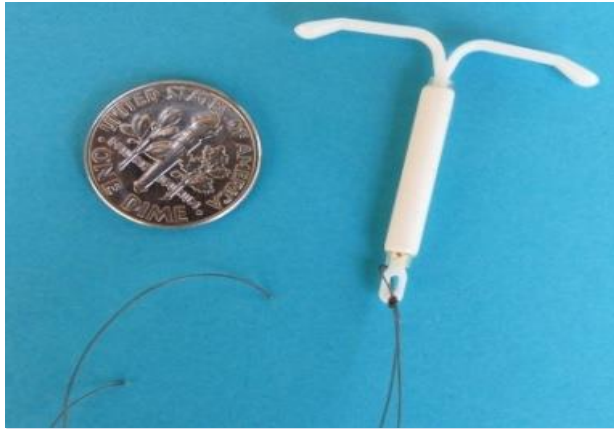
YRBS Question	VT 2015
Primary method of pregnancy prevention in students who had sex in the last 3 months :	
birth control pills	35% (2013 35%)
shot, patch, ring	6% (2013 6%)
iud, implant	6% (2013 3%)

What is LARC?

Long-
Acting
Reversible
Contraception

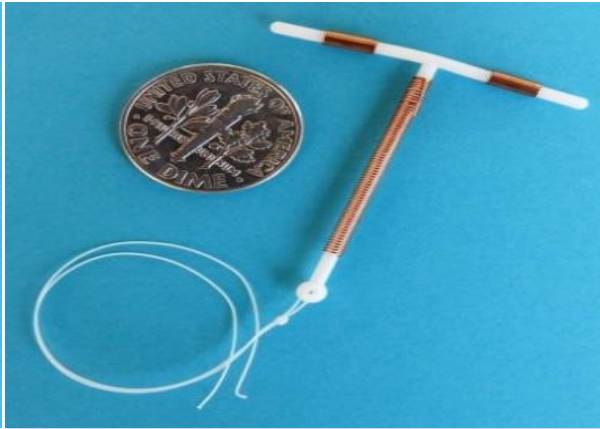


What are LARCS?



LNG-IUS

- 99% effective
- 20 mcg levonorgestrel/day
- Up to 5 years



Copper T IUD

- 99% effective
- Copper ions
- Up to 10 years



Subdermal Implant

- 99% effective
- 60 mcg etonogestrel/day
- Up to 3 years

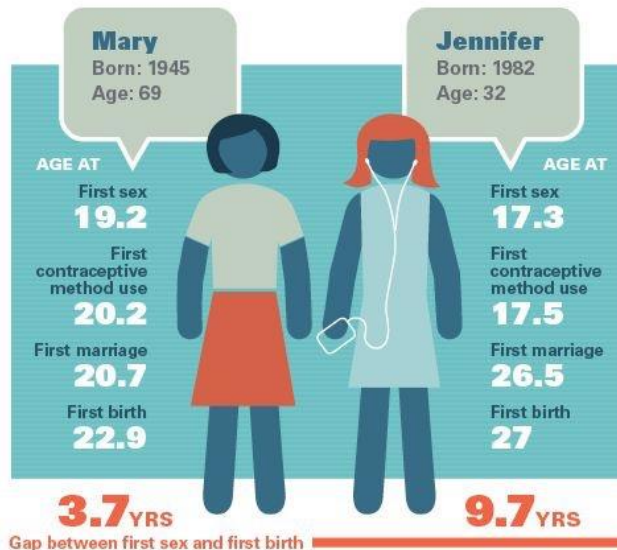
Long-Acting Reversible Contraception (LARC)

- Most effective methods: >99%
- Safest
 - No estrogen
 - Contraindications rare
- Highest patient satisfaction
 - (80% LARC vs 50% short acting)
- Highest continuation rates
 - (86% LARC vs. 55% short acting)
- Long-term protection—lasts 3-12 years
- Rapid return of fertility
- Most cost effective

Another reason Long Acting is appealing...

An American woman's age at first sex has changed little over time, but...

she is now getting married and having children later

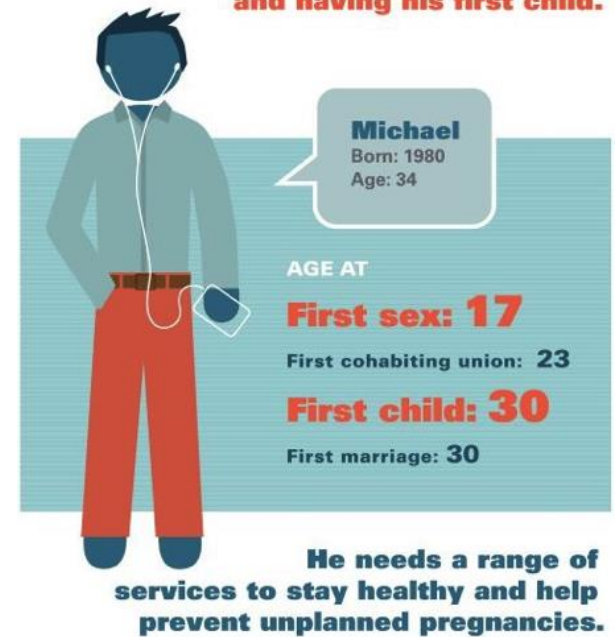


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Today, the typical American man experiences a

13-year gap

between having sex for the first time and having his first child.



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LARCs are Easy to Use

5 years of
birth control

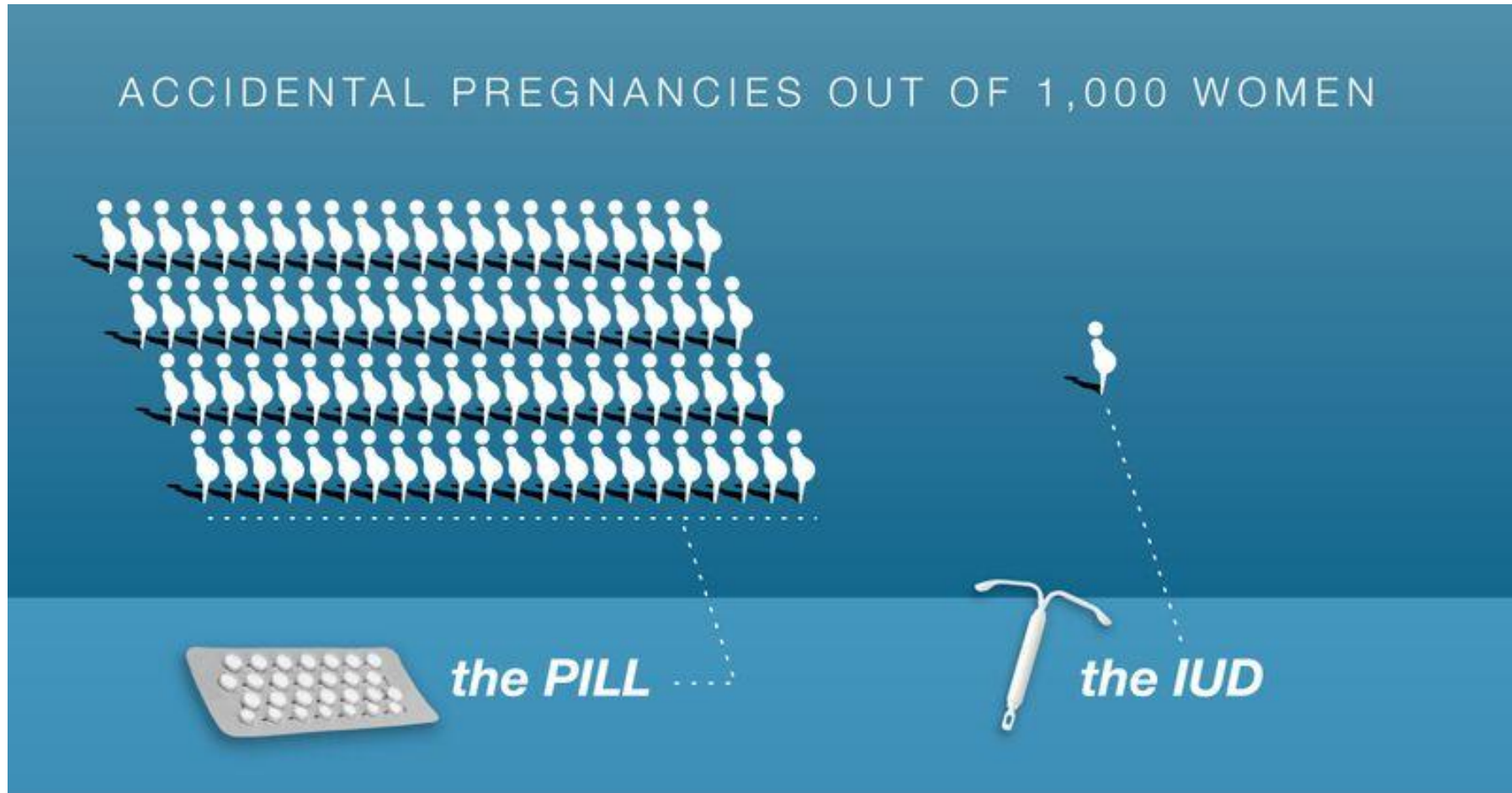


1 IUD

vs.

1,820 PILLS

LARCs are 99% Effective



LARCs are Safe



AAP



CMS



ACOG



HHS



CDC



CHIP



WHO



FDA

Support for LARCS

U.S. Selected Practice Recommendations for Contraceptive Use, 2013: Adapted from the World Health Organization Selected Practice Recommendations for Contraceptive Use, 2nd Edition

Recommendations and Reports

June 21, 2013 / 62(RR05);1-46

Prepared by

Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion



Support for LARCS

- ▶ “With top-tier effectiveness, high rates of satisfaction and continuation, and no need for daily adherence, LARC methods should be **first-line recommendations for adolescents.**”
- ▶ “Intrauterine devices do not increase an adolescent’s risk of infertility.”
- ▶ “Intrauterine devices may be inserted without technical difficulty in most adolescents and nulliparous women.”



ACOG
THE AMERICAN CONGRESS
OF OBSTETRICIANS
AND GYNECOLOGISTS

Support for LARCS



- “Given the efficacy, safety, and ease of use, LARC methods should be considered **first-line contraceptive choices for adolescents.**”
- “Pediatricians should be able to educate patients about LARC methods...”

American Academy of Pediatrics. Policy Statement.
Contraception for Adolescents. 9/29/2014

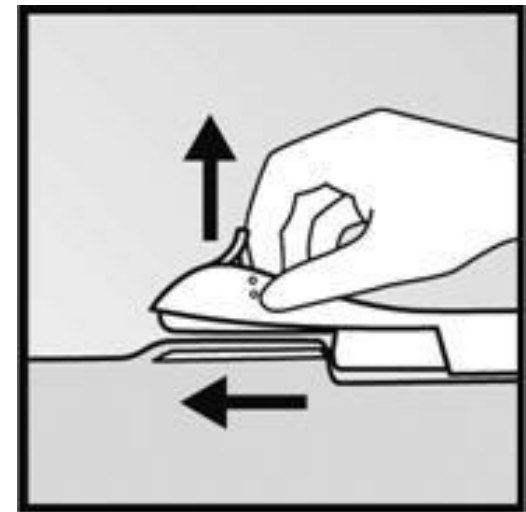
The Implant: Nexplanon

- ▶ Single 4cm long implant
- ▶ Contains etonogestrel progestin only
- ▶ Effective for 3 years
- ▶ Main Mechanism: Inhibits ovulation
- ▶ Side effects: unpredictable bleeding, irregular vs. amenorrhea



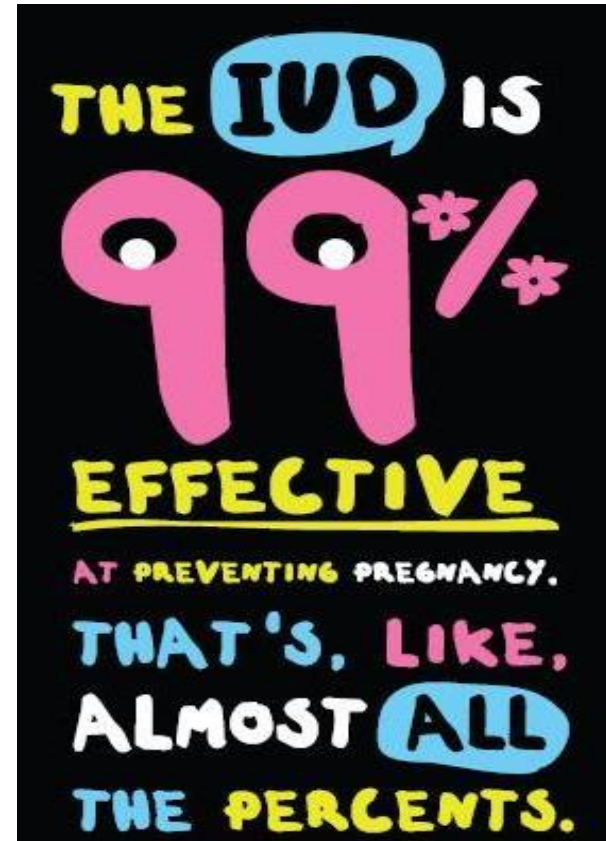
The Implant: Nexplanon

- ▶ FDA approved in 2006
- ▶ Implanted in the upper arm
- ▶ Inserted and removed by a clinician



IUDs: 2 General Types

- Copper IUD
- Progestin IUD



The Progestin IUD: Mirena/Skyla

- Fertilization inhibition:
 - Cervical mucus thickened
 - Sperm motility and function inhibited
 - Weak foreign body reaction induced
 - Ovulation inhibited (in 5%–15% of cycles)
- Requires normal uterus and office visit every
 - 5y for Mirena
 - 3y for Skyla
- Patient must be able to tolerate
 - Pelvic exam and insertion
 - Cramping/bleeding after insertion



The IUD: Mirena

- 20 mcg levonorgestrel/day
- 5-7 years use
- Amenorrhea in ~40% of users by 1 year



The IUD: Skyla

- Mirena's "little sister": narrower, smaller
- FDA approved on January 9, 2013
- 14mcg/day of levonorgestrel, progestin only
- Designed to prevent pregnancy for up to **3 years**
- Only 6% with amenorrhea at 1yr



The IUD: Paragard/Copper

- Copper ions: cytotoxic inflammatory reaction toxic to sperm and ova
- No hormones
- 10-12 years of use
- Can be used as EC also
- Benefits: No hormones, regular menses



The IUD: Dispelling Old Myths

- **Can** be used by nulliparous women
- **Can** be used by women who have had an ectopic pregnancy
- **Can** be used by women with multiple partners
- **Can** be used by women with h/o sexually transmitted infection (STI)/pelvic inflammatory disease (PID)
- **Do not** need to be removed for PID treatment
- **Can** be used by teens



Who Cannot Use IUDs?

- Current PID or untreated symptomatic infection
- Post abortion/partum infection in past 3 mo.
- Current or suspected pregnancy
- Anatomically distorted uterine cavity
- Known cervical, breast or uterine cancer
- Genital bleeding of unknown etiology
- Wilson's disease (Paragard)

What are the barriers to LARC use?

Patients & Providers:

- Lack of knowledge
- Lack of comfort

Providers:

- Lack of training to provide
- Systemic barriers
- Insurance barriers



Resources

- In-service UCSF Bixby Center LARC training:
bixbycenter.ucsf.edu/research/cd_and_fp/larc.html
- www.acog.org/About-ACOG/ACOG-Departments/Long-Acting-Reversible-Contraception
- www.love-my-larc.org/live/larc-awareness-week
- www.teensource.org/birth-control/long-acting-reversible-methods
- www.safeandeffective.org/pages
- bedsider.org/methods/iud#details_tab

Resources


- www.advocatesforyouth.org Advocates for Youth
- www.aap.org American Academy of Pediatricians
- www.aclu.org/reproductive-freedom ACLU Reproductive Freedom Project
- www.acog.org American College of Obstetricians and Gynecologists
- www.arhp.org Association of Reproductive Health Professionals
- www.cahl.org Center for Adolescent Health and the Law

Resources

- www.guttmacher.org Guttmacher Institute
- janefondacenter.emory.edu Jane Fonda Center at Emory University
- www.msm.edu Morehouse School of Medicine
- www.naspag.org North American Society of Pediatric and Adolescent Gynecology
- www.prh.org Physicians for Reproductive Health

Resources

- ▶ www.siecus.org Sexuality Information and Education Council of the United States
- ▶ www.adolescenthealth.org Society for Adolescent Health and Medicine
- ▶ www.plannedparenthood.org Planned Parenthood Federation of America
- ▶ www.reproductiveaccess.org Reproductive Health Access Project



What affect could LARC have on the population?

Donna Burkett, MD
Medical Director
Planned Parenthood of
Northern New England

THE
CONTRACEPTIVE
CHOICE
PROJECT



Call from Anonymous Foundation

- Remove financial barriers to most effective long-term reversible methods
 - Promote LARC use
- Provide no-cost contraception & make a population impact:
 - Teen pregnancy
 - Repeat abortion procedures

MYTHS Regarding IUCs: Survey of St. Louis Women (N=1,665)

- 50% of women surveyed believe IUC is SAFE
- Common safety concerns:
 - Pelvic Pain 36%
 - Infertility 30%
 - Cancer 14%
 - STDs 11%
- 61% underestimate the effectiveness

Contraceptive Cohort Study

- Recruit 10,000 participants over 4 years
 - Remove cost barriers to long-term methods
 - Copper IUD (ParaGard)
 - LNG IUD (Mirena)
 - Implant (Implanon)
 - Participant choice
 - 2-3 years follow-up
 - Assess continuation, satisfaction
 - Population outcomes



CHOICE: Inclusion Criteria

- 14-45 years
- Primary residency in STL City or Country
- Sexually active with male partner (or soon to be)
- Does not desire pregnancy during next 12 months
 - Desires reversible contraception
- Willing to try a new contraceptive method

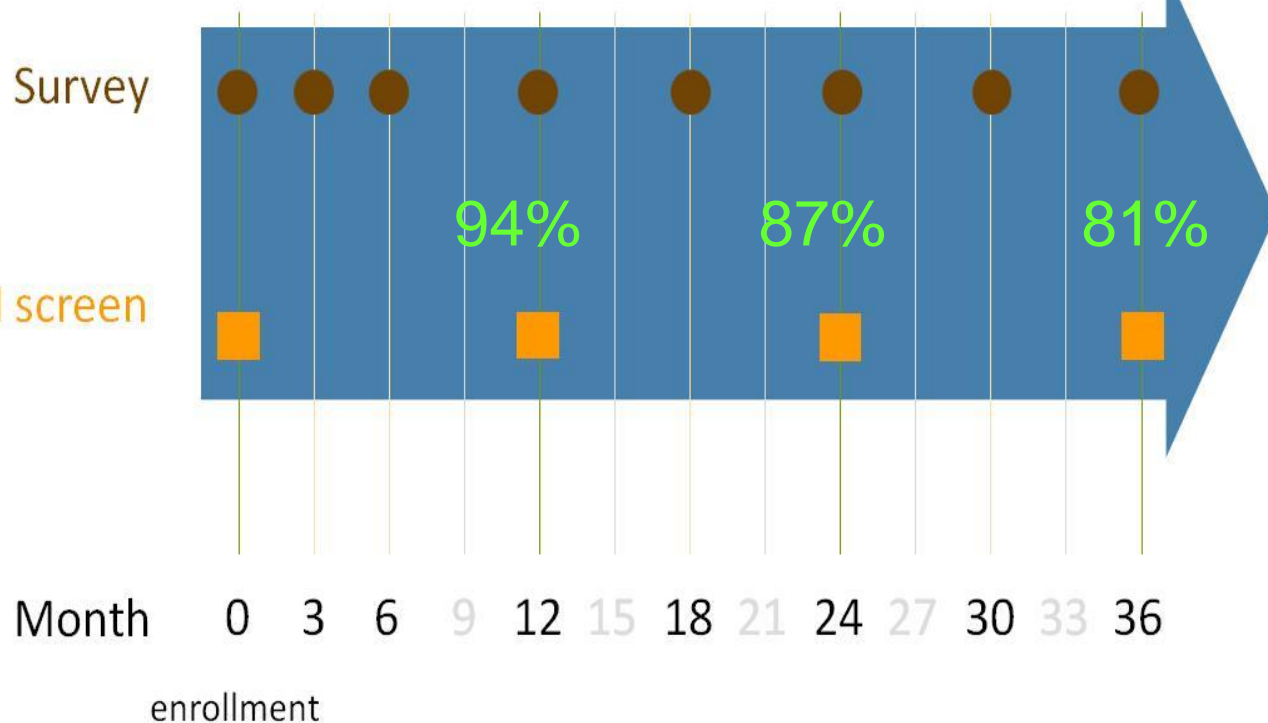
Contraceptive CHOICE Project: Study Details

ELIGIBLE

Tiered
Contraceptive
Counseling

LNG-IUS
Cu-IUD
Implant
DMPA
Pills
Patch
Ring
Other

Survey
STI screen



Baseline Characteristics

Age (years)	N	}		%
14-17	485	}		5.2
18-20	1548			16.7
21-25	3559			38.5
26-35	3029			32.7
36-45	635			6.9
				2,033
Race	n			%
Black	4660			50.6
White	3861			41.9
Other	693			7.5

Baseline Characteristics (N=9,256)

SES	n	%
Public assistance	3442	37.2
Trouble meeting basic needs	3639	39.3

Insurance	n	%
None	3782	41.1
Private	3957	43.1
Public	1455	15.8

Baseline Characteristics

Parity	N	%
0	4375	47.3
1-2	3885	50.0
3+	996	10.7

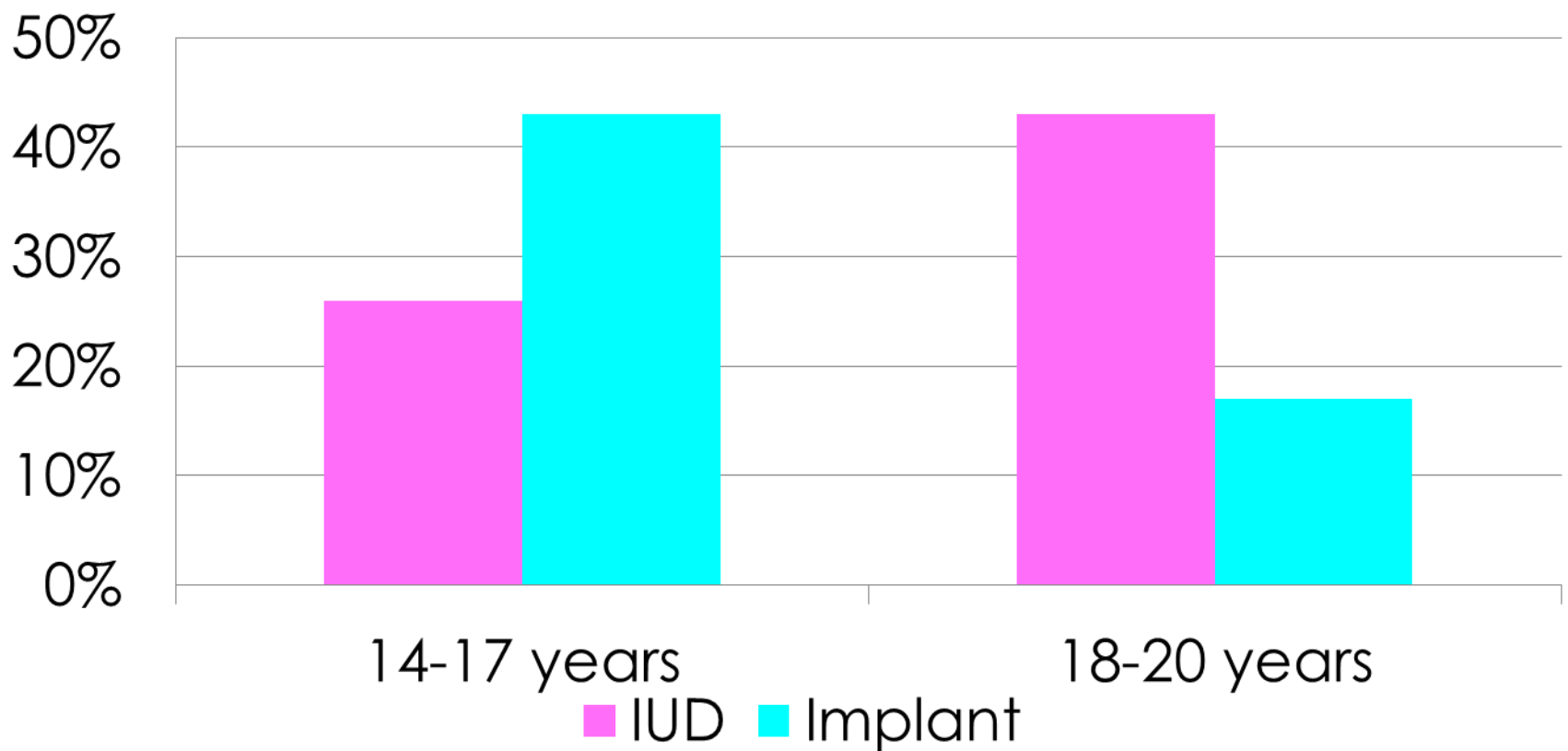
Unintended pregnancy	5857	63.2
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History of STI	3746	40.5
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LARC Acceptance

	%	
LNG-IUS	46.0	} 75%
CuT380A	11.9	
Implant	16.9	
DMPA	6.9	
Pills	9.4	
Ring	7.0	
Patch	1.8	
Other	<1.0	

Choice of LARC Methods in Adolescents



Evaluation of CHOICE

- Outcomes
 - Short term:
 - Effectiveness
 - Continuation & satisfaction
 - Long-term
 - Population-based outcomes
 - Unplanned pregnancies:
 - Repeat abortions
 - Teen births

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ORIGINAL ARTICLE

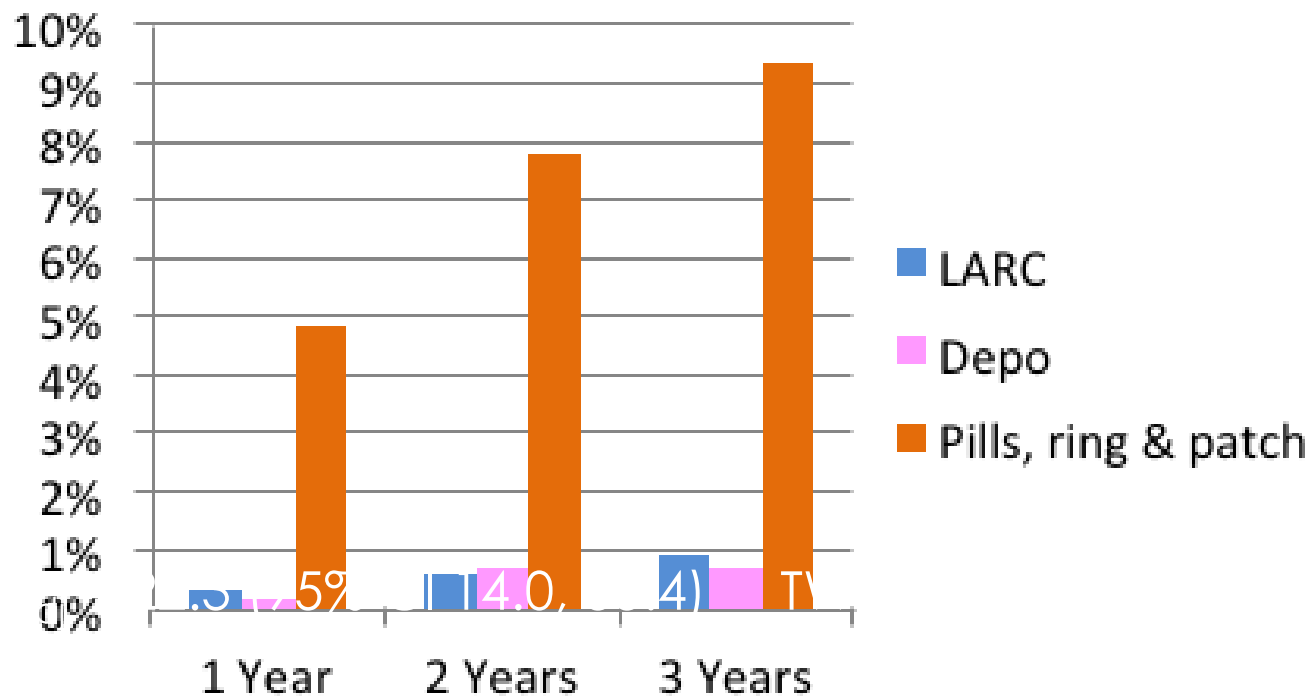
Effectiveness of Long-Acting Reversible Contraception

Brooke Winner, M.D., Jeffrey F. Peipert, M.D., Ph.D., Qiuhong Zhao, M.S.,
Christina Buckel, M.S.W., Tessa Madden, M.D., M.P.H., Jenifer E. Allsworth, Ph.D.,
and Gina M. Secura, Ph.D., M.P.H.

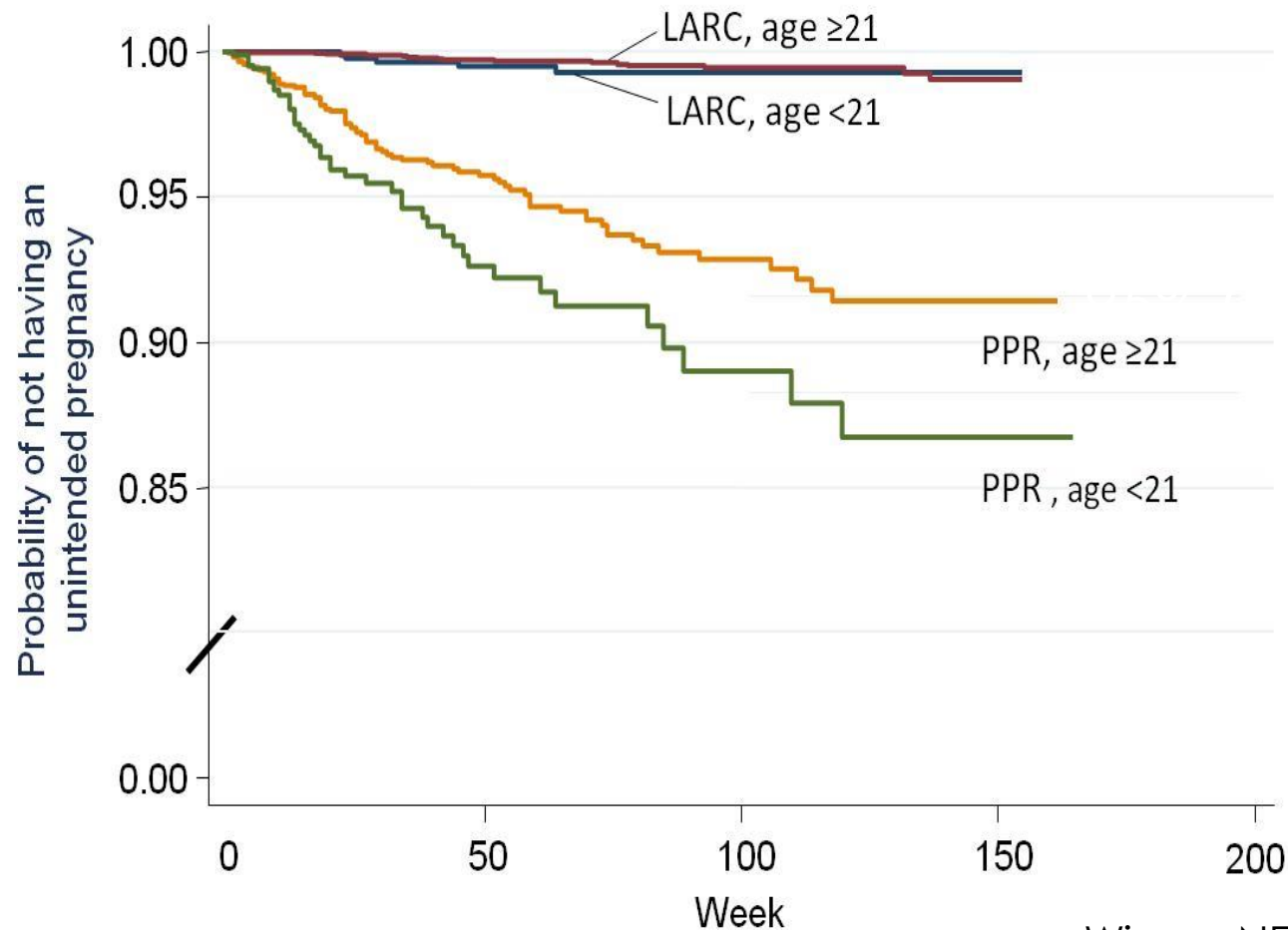
Unintended Pregnancy Rates in CHOICE Cohort

- August 2007 through July 2011
 - 615 reported pregnancies
 - 459 (75%) unintended
 - 334 contraceptive failures

Unintended Pregnancy by Contraceptive Method



Method Failure by Age



Winner NEJM 2012

12- & 24-Month Continuation: Overall Cohort

Method	12-Month (%)	24-Month (%)
LNG-IUS	87.5	78.9
Copper IUD	84.1	77.3
Implant	83.3	68.5
Any LARC	86.2	76.6
DMPA	56.2	38.0
OCPs	55.0	43.5
Ring	54.2	41.1
Patch	49.5	39.9
Non-LARC	54.7	40.9

12-Month Satisfaction*: Overall Cohort & By Age

Method	Overall (%)	14-19 (%)	20-45 (%)
LNG- IUS	83.1	77%	84%
Copper IUD	80.2	72%	81%
Implant	77.0	74%	78%
Any LARC	81.2	75%	82%
DMPA	50.1	43%	52%
Pills	49.3	46%	50%
Ring	49.7	31%	52%
Patch	37.2	35%	38%
Non-LARC	48.8	42%	50%

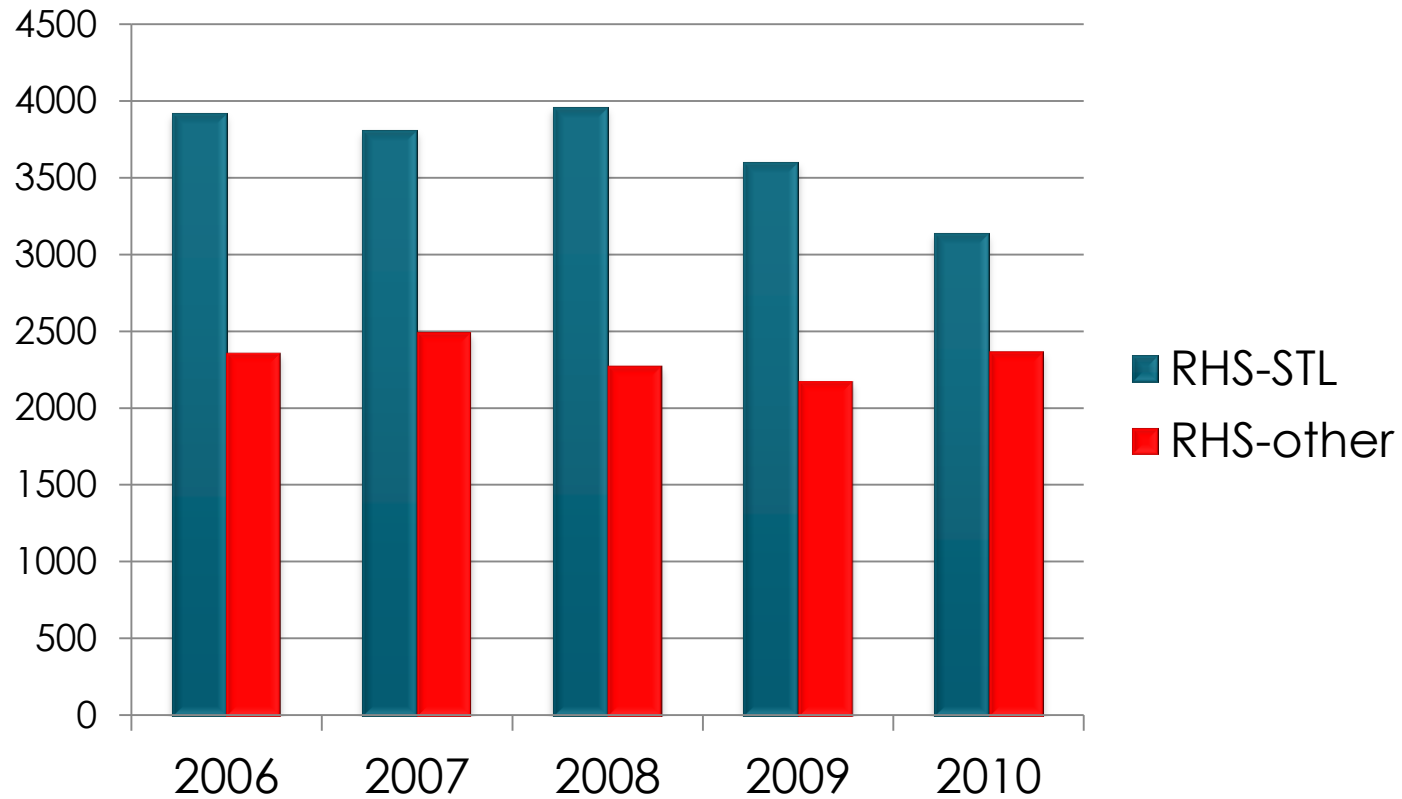
*Very or somewhat satisfied combined



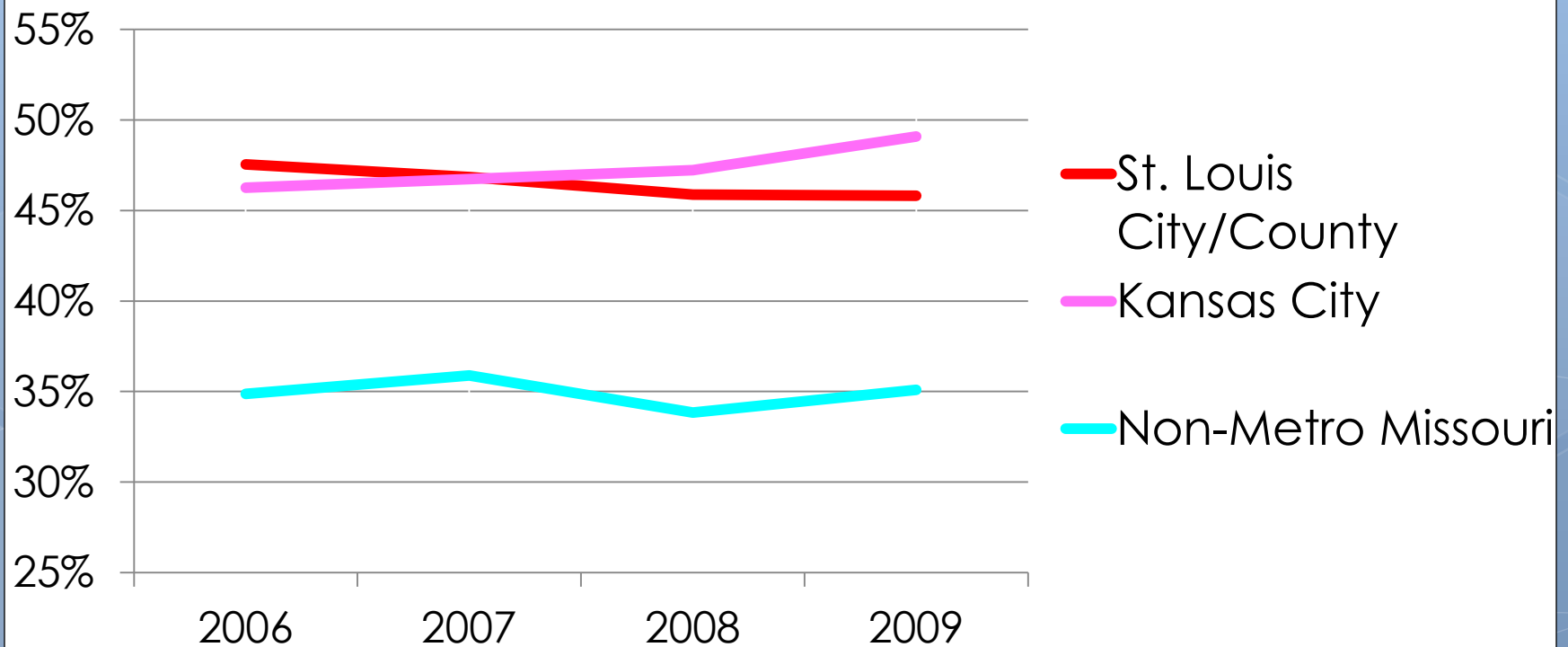
Contraceptive CHOICE Project

Population Outcomes

Abortion Data: RHS



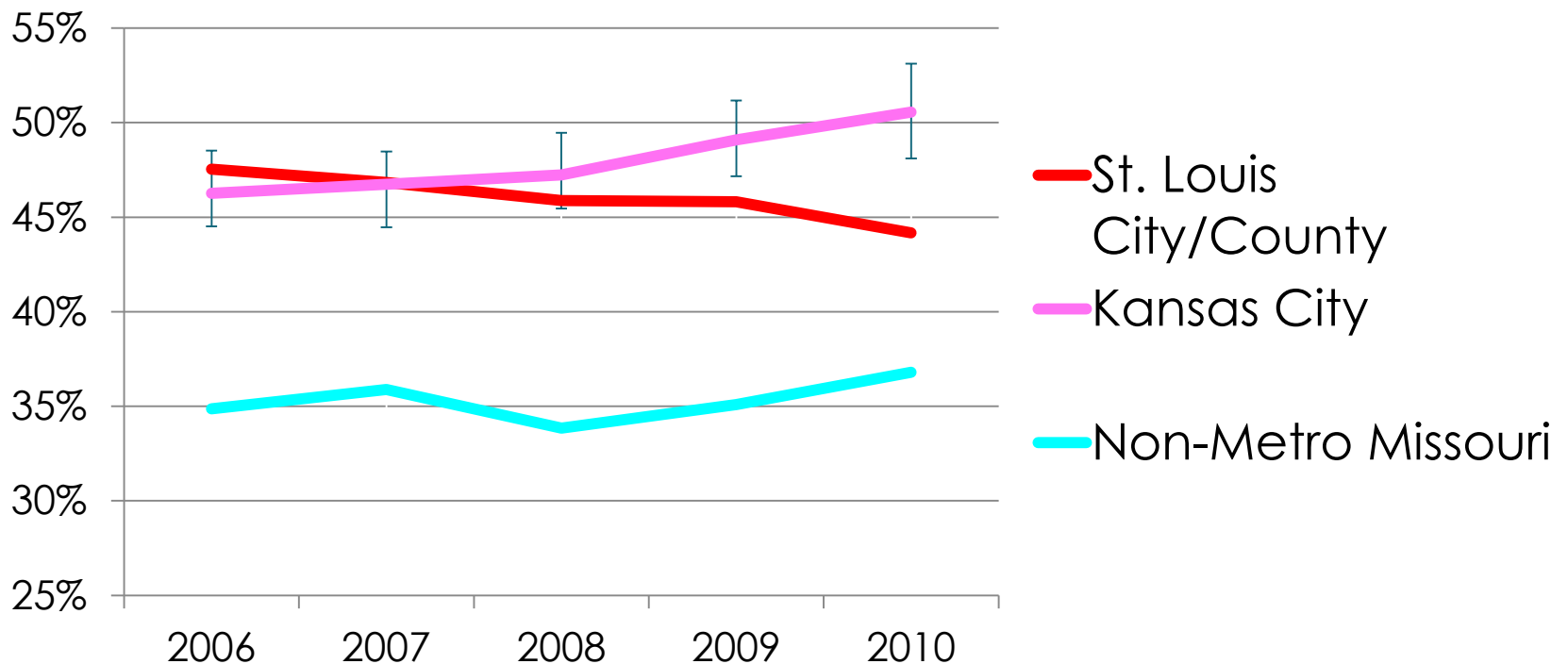
Repeat Abortion 2006 - 2009



P-value

KC:STL	0.32	0.93	0.31	0.02
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Percentage of Abortions that are Repeat Abortions



P-value

KC:STL 0.32 0.93 0.31 0.02 <0.001

Pregnancy Outcomes: CHOICE Compared to U.S.

	CHOICE Annual Rate	U.S. Rate	Reduction
Pregnancy	39.4	108*	63%
Unintended pregnancy	29.6	52*	43%
Abortion	10.4	19.6^	47%

All rates per 1,000 women 15-44 years

* 2006 data

^ 2008 data

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ORIGINAL ARTICLE

Provision of No-Cost, Long-Acting Contraception and Teenage Pregnancy

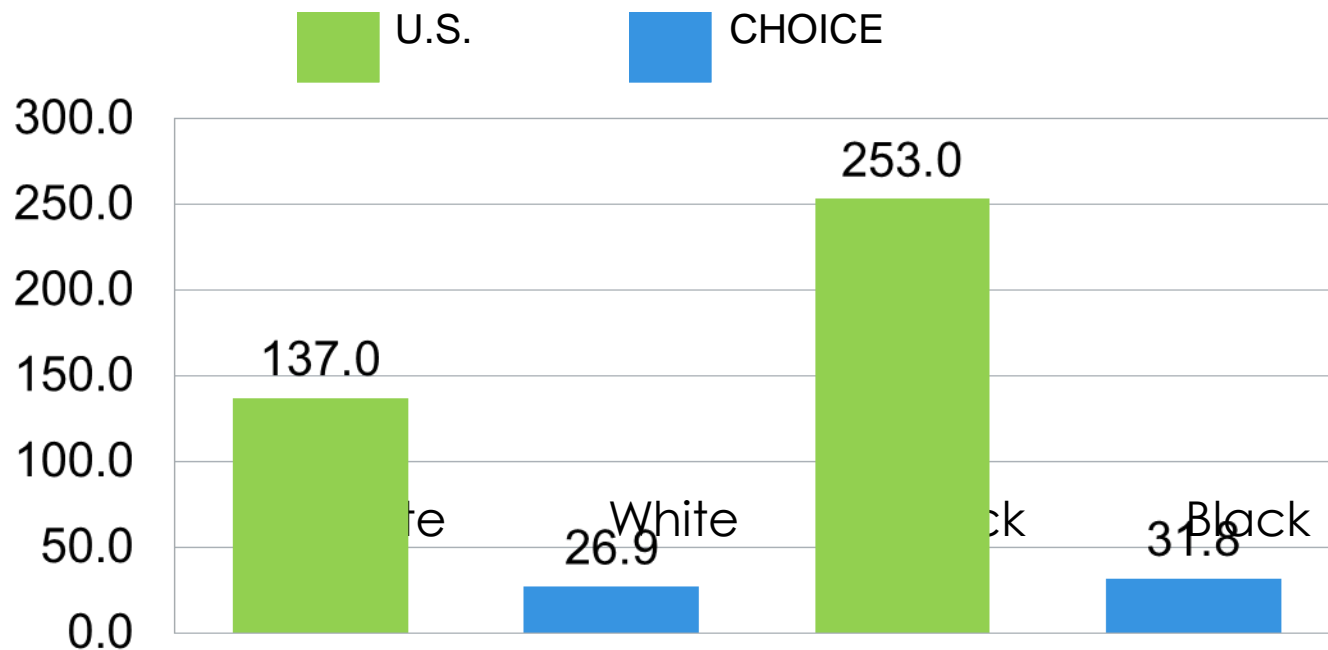
Gina M. Secura, Ph.D., M.P.H., Tessa Madden, M.D., M.P.H.,
Colleen McNicholas, D.O., Jennifer Mullersman, B.S.N.,
Christina M. Buckel, M.S.W., Qihong Zhao, M.S., and
Jeffrey F. Peipert, M.D., Ph.D.

Teen Outcomes: CHOICE Compared to U.S.

	CHOICE Annual Rate*	2008 U.S. Rate*	Reduction
Pregnancy among sexually active teens	34.0	158.5	64%
Birth	19.4	94.0	63%
Abortion	9.7	41.5	65%

*All rates per 1,000 teens 15-19 years

Pregnancy Rates: Sexually Experienced U.S. Teens Compared to CHOICE Stratified by Race



The Secret: 3 Key Ingredients

- Education regarding all methods, especially LARC
 - Reframe the conversation:
 - start with the most effective methods
- Access to providers who will offer & provide LARC
 - Dispel myths and increase the practice of evidence-based medicine
- Affordable contraception
 - Institute of Medicine recommendation, Affordable Care Act, Medicaid Expansion, local funders

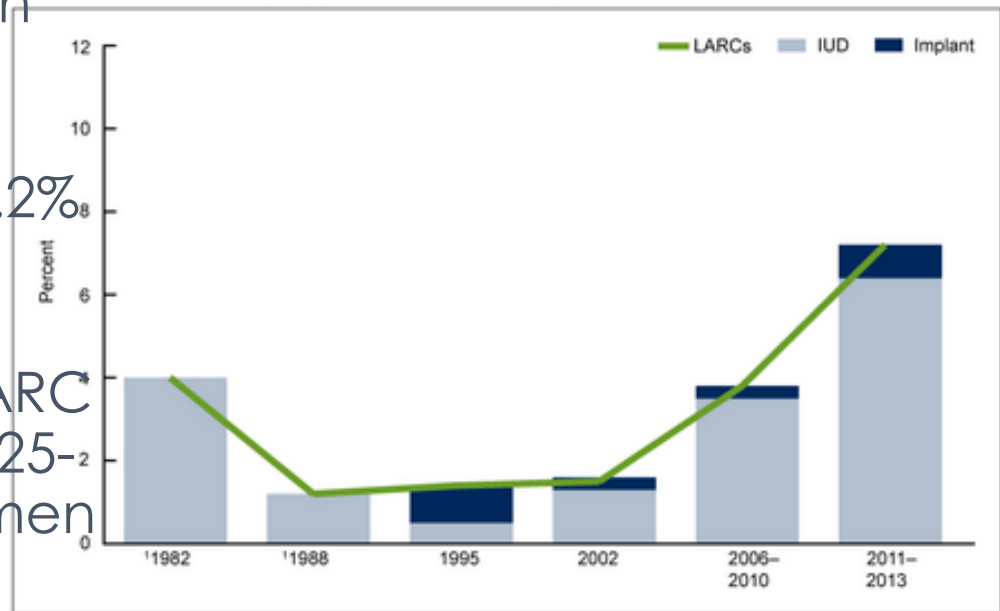


UCSF & PPFA LARC Research

- 2011-13, cluster randomized trial
- 40 USA reproductive health clinics
- Intervention clinics received evidence-based training for LARC service delivery
- Participants: 1,500 females ages 18-25
- Unintended pregnancy can be reduced by training health providers in contraceptive counseling and insertion of LARCs.

LARC Use Among U.S. Women Aged 15-44

- Most recent data:
 - 5-fold increase in LARC use in last decade
 - 1.5% (2002) to 7.2% (2011-13)
 - Percentage of women using LARC highest among 25-35 year-old women



Can CHOICE Help Shape Policy?



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Perspective

Family Planning as a Cost-Saving Preventive Health Service

Kelly Cleland, M.P.A., M.P.H., Jeffrey F. Peipert, M.D., Ph.D., Carolyn Westhoff, M.D., Scott Spear, M.D.,
and James Trussell, Ph.D.

Nearly half the pregnancies that occur each year in the United States are unintended, according to the Guttmacher Institute. In 2001, an estimated 3.1 million pregnancies were reportedly unwanted or mistimed, and by 45 years of age, 1 in 4 women has been sexually abused, and 1 in 4 has not received suf-

ficient information about reproductive health. These issues create potentially serious burdens on individuals and families, as well as considerable economic costs on society. The cost of one Medicaid-covered birth in the United States (including prenatal care, delivery, postpartum

Colorado

- 2009-2013 – Colorado Family Planning Initiative
- 28 Title-X funded health centers received additional funding (as opposed to sliding scale)
- Multiple funding resources

CFPI results

- By 2011:
 - LARC use in 15-24 yo increased from 5% to 19%
 - Fertility rates:
 - 29% lower among 15-19 y.o. than expected
 - 14% lower among 20-24 y.o. than expected
 - High risk births declined in the counties with CFPI clinics
 - Abortion rates declined 34% and 18%
 - WIC enrollment declined 23% between 2010 and 2013

Illinois – Medicaid program

- “Payments/policies” = value placed on providing the most effective contraception
 - Doubled insertion rates (\$44 to \$88)
 - Increased 340-B providers’ dispensing fees for LARC and hormonal contraceptives
 - Allow modifier -25 for same-day services that include LARC
 - Hospital reimbursement for post-partum LARC placement
- All BCMs made available by all plans and providers
 - Tiered counseling
 - Cost-sharing not allowed – clear communication with plans
 - Work with pharmaceutical industry on stocking

Vermont?

